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WEINGARTEN, SCHURGIN, GAGNEBIN & LEBOVICI LLP
TEN POST OFFICE SQUARE
BOSTON, MA 02109

EXAMINER
THANGAVELU, KANDASAMY

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE f this communication appears on the cover sheet with the corresp ndence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>12 September 2003</u>.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-84</u> is/are pending in the application.

  4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-3,5-17,19-55,57-70 and 72-84</u> is/are rejected.

7)☒ Claim(s) <u>4,18,56 and 71</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>12 September 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

  a)☐ All b)☐ Some * c)☐ None of:

  1.☐ Certified copies of the priority documents have been received.

  2.☐ Certified copies of the priority documents have been received in Application No. _____.

  3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
  application from the International Bureau (PCT Rule 17.2(a)).

  * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
  Paper No(s)/Mail Date <u>15 December 2003</u>.

4)☐ Interview Summary (PTO-413)
  Paper No(s)/Mail.Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Introduction

1.   This communication is in response to the Applicants' Amendment dated

November 2, 2004. Claims 1-84 of the application are pending. This office action is

made final.

Information Disclosure Statement

2.   Acknowledgment is made of the information disclosure statement filed on

December 15, 2003 together with copies of the patents and papers. The patents and

papers have been considered in reviewing the claims.

Terminal Disclosure not Proper

3.   The terminal disclaimer filed on 4 November 2004 disclaiming the terminal

portion of any patent granted on this application which would extend beyond the

expiration date of 6,281,808 has been reviewed and is NOT accepted.

    The terminal disclaimer does not comply with 37 CFR 1.321(b) and/or (c)

because:

The person who has signed the disclaimer has not stated the extent of his/her interest, or the business entity's interest, in the application/patent. See 37 CFR 1.321(b)(3).

Drawings

4.   The drawings filed on September 12, 2003 are accepted.

Double Patenting

5.   The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a

terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with

37 CFR 3.73(b).

6.   Claim 1 is rejected under the judicially created doctrine of obviousness-type double

patenting as being unpatentable over Claims 1, 2 and 14 of U.S. Patent No. 6,281,808. Although

the conflicting claims are not identical, they are not patentably distinct from each other.

Claim 1 teaches a system for detecting a violation of a traffic signal at an intersection

comprising the steps of:

a virtual violation line interface for receiving from a user data defining a virtual violation

line that corresponds to a location at the intersection that if crossed by a vehicle entering the

intersection during a red light phase of the traffic signal, is indicative of a violation of the traffic

signal by the vehicle;

a storage device for storing a representation of the intersection and the virtual violation

line;

at least one camera for capturing at least one image of a vehicle at the intersection;

a processing unit operative to:

analyze the at least one image to identify a position of the vehicle with respect to the

virtual violation line,

compare the position of the vehicle to the virtual violation line, and generate an

indication of a violation in the event the processing unit determines that the position of the

vehicle is beyond the location and that the vehicle has traveled into the intersection during the red light phase of the traffic signal.

Claim 1 of the '808 patent teaches a system for detecting a violation of a traffic signal at an intersection;

defining a virtual violation line that corresponds to a location at the intersection that if crossed by a vehicle entering the intersection during a red light phase of the traffic signal, is indicative of a violation of the traffic signal by the vehicle;

a processing unit operative to:

analyze the at least one image to identify a position of the vehicle with respect to the virtual violation line,

compare the position of the vehicle to the virtual violation line, and generate an indication of a violation in the event the processing unit determines that the position of the vehicle is beyond the location and that the vehicle has traveled into the intersection during the red light phase of the traffic signal.

Claim 1 of the '808 patent does not teach a virtual violation line interface for receiving from a user data defining a virtual violation line; a storage device for storing a representation of the intersection and the virtual violation line; and at least one camera for capturing at least one image of a vehicle at the intersection. '808 patent teaches a virtual violation line interface for receiving from a user data defining a virtual violation line (CL6, L11-13). Claim 14 of the '808 patent teaches a storage device for storing a representation of the intersection and the virtual violation line; Claim 2 of the '808 patent teaches at least one camera for capturing at least one

image of a vehicle at the intersection. It would have been obvious to one of ordinary skill in the art to arrive at Claim 1 of the application from the elements of claim 1, 14 and 2 of the '808 patent and the description of the '808 patent, since it requires only rearranging the limitations involved and paraphrasing them and adding some limitations taken from the description.

7.   Claim 2 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1, 14 and 2 of U.S. Patent No. 6,281,808. Although the conflicting claims are not identical, they are not patentably distinct from each other.

Claim 2 teaches the system of claim 1, wherein the at least one camera is further operative to capture a plurality of images of the vehicle approaching the intersection; and

the processing unit is operative to analyze the plurality of images of the vehicle and to generate a prediction signal in the event it is determined by the processing unit that the vehicle is likely to violate the red light phase of the traffic signal.

Claim 1 of the '808 patent teaches the at least one violation prediction image capturing device is further operative to capture a plurality of images of the vehicle approaching the intersection; and

the processing unit is operative to analyze the plurality of images of the vehicle and to generate a prediction signal in the event it is determined by the processing unit that the vehicle is likely to violate the red light phase of the traffic signal.

Claim 1 of the '808 patent does not expressly teach that the at least one violation prediction image capturing device is at least one camera. Claim 2 of the '808 patent teaches that

the at least one violation prediction image capturing device is at least one camera. It would have

been obvious to one of ordinary skill in the art to arrive at Claim 2 of the application from the

elements of claims 1, 14 and 2 of the '808 patent, since it requires only rearranging the

limitations involved and paraphrasing them.

8.   Claim 3 is rejected under the judicially created doctrine of obviousness-type double

patenting as being unpatentable over Claims 1, 14 and 2 of U.S. Patent No. 6,281,808. Although

the conflicting claims are not identical, they are not patentably distinct from each other.

        Claim 3 teaches the system of claim 1, further including an additional signaling device

for cross traffic approaching the intersection from a direction other than the vehicle, the

additional signaling device responsive to the prediction signal for signaling the cross traffic not

to enter the intersection.

        Claim 1 of the '808 patent teaches the system of claim 1, further including an additional

signaling device for cross traffic approaching the intersection from a direction other than the

vehicle, the additional signaling device responsive to the prediction signal for signaling the cross

traffic not to enter the intersection. It would have been obvious to one of ordinary skill in the art

to arrive at Claim 3 of the application from the elements of claims 1, 14 and 2 of the '808 patent,

since it requires only rearranging the limitations involved and paraphrasing them.

9.   Claims 5-14 are rejected under the judicially created doctrine of obviousness-type double

patenting as being unpatentable over Claims 1, 14, 2-4 and 7-12 of U.S. Patent No. 6,281,808.

Although the conflicting claims are not identical, they are not patentably distinct from each other.

Claim 5-14 depend on the independent claim 1 and then include various limitations in the dependent claims. The independent claim 1 is taught by claims 1, 14 and 2 of the '808 patent as discussed in Paragraph 6 above. The limitations in claims 5-14 are same or paraphrased variations of the limitations in claims 2-4 and 7-12 of the '808 patent. It would have been obvious to one of ordinary skill in the art to arrive at Claims 5-14 of the application from the elements of claims 1, 14, and claims 2-4 and 7-12 of the '808 patent, since it requires only rearranging the limitations involved and paraphrasing them.

10.   Claim 15 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claim 18 of U.S. Patent No. 6,281,808. Although the conflicting claims are not identical, they are not patentably distinct from each other.

Claim 15 teaches a method for detecting a violation of a traffic signal comprising the steps of:

storing in a storage device a representation of a traffic intersection, the representation of the intersection including a virtual violation line corresponding to a location at the intersection that if crossed by a vehicle entering the intersection during a red light phase of the traffic signal, is indicative of a violation of the traffic signal by the vehicle, the location of the virtual violation line with respect to the intersection being user configurable;

capturing at least one image showing the vehicle at the intersection;

analyzing the at least one image of the vehicle at the intersection to ascertain a position of

the vehicle with respect to the location corresponding to the virtual violation line; and

generating an output indicative of a violation of a red light phase of the traffic signal in

the event the analyzing step indicates that the vehicle has traveled beyond the location

corresponding to the virtual violation line and into the intersection during the red light phase of

the traffic signal.

Claim 18 of the '808 patent teaches a method for detecting a violation of a traffic signal;

storing in a storage device a representation of a traffic intersection, the representation of

the intersection including a virtual violation line corresponding to a location at the intersection

that if crossed by a vehicle entering the intersection during a red light phase of the traffic signal,

is indicative of a violation of the traffic signal by the vehicle;

capturing at least one image showing the vehicle at the intersection;

analyzing the at least one image of the vehicle at the intersection to ascertain a position of

the vehicle with respect to the location corresponding to the virtual violation line;

generating an output indicative of a violation of a red light phase of the traffic signal in

the event the analyzing step indicates that the vehicle has traveled beyond the location

corresponding to the virtual violation line and into the intersection during the red light phase of

the traffic signal.

Claim 18 of the '808 patent does not teach the location of the virtual violation line with

respect to the intersection being user configurable. '808 patent teaches the location of the virtual

violation line with respect to the intersection being user configurable (CL6, L11-13). It would

have been obvious to one of ordinary skill in the art to arrive at Claim 15 of the application from

the elements of claim 18 and the description of the '808 patent, since it requires only rearranging

the limitations involved and paraphrasing them and adding some limitations taken from the

description.

11.   Claim 16 is rejected under the judicially created doctrine of obviousness-type double

patenting as being unpatentable over Claim 18 of U.S. Patent No. 6,281,808. Although the

conflicting claims are not identical, they are not patentably distinct from each other.

Claim 16 teaches the method of claim 15, further comprising the steps of:

capturing a plurality of images showing the vehicle approaching the traffic signal; and

generating a prediction signal responsive to the plurality of images, and an indication of a

current traffic signal light phase, in response to a determination that the vehicle is likely to

violate the red light phase of the traffic signal.

Claim 18 of the '808 patent teaches capturing a plurality of images showing the vehicle

approaching the traffic signal; and

generating a prediction signal responsive to the plurality of images, and an indication of a

current traffic signal light phase, in response to a determination that the vehicle is likely to

violate the red light phase of the traffic signal, using somewhat different language. It would have

been obvious to one of ordinary skill in the art to arrive at Claim 16 of the application from the

elements of claim 18, since it requires only rearranging the limitations involved and paraphrasing

them.

12.   Claim 17 is rejected under the judicially created doctrine of obviousness-type double

patenting as being unpatentable over Claims 18 of U.S. Patent No. 6,281,808. Although the

conflicting claims are not identical, they are not patentably distinct from each other.

        Claim 17 teaches the method of claim 16, further including the step of signaling cross

traffic approaching the intersection from a direction other than the vehicle not to enter the

intersection responsive to the prediction signal.

        Claim 18 of the '808 patent teaches the method of claim 16, further including the step of

signaling cross traffic approaching the intersection from a direction other than the vehicle not to

enter the intersection responsive to the prediction signal, using somewhat different language. It

would have been obvious to one of ordinary skill in the art to arrive at Claim 17 of the

application from the elements of claim 18 and the description of the '808 patent, since it requires

only rearranging the limitations involved and paraphrasing them and adding some limitations

taken from the description.

13.   Claims 19-28 are rejected under the judicially created doctrine of obviousness-type

double patenting as being unpatentable over Claims 19-30 of U.S. Patent No. 6,281,808.

Although the conflicting claims are not identical, they are not patentably distinct from each

other.

        Claim 19-28 depend on the independent claim 15 and then include various limitations in

the dependent claims. The independent claim 15 is taught by claim 18 and the descriptions of the

'808 patent as discussed in Paragraph 10 above. The limitations in claims 19-28 are same or

paraphrased variations of the limitations in claims 19-30 of the '808 patent. It would have been

obvious to one of ordinary skill in the art to arrive at Claims 19-28 of the application from the

elements of claims 18-30 of the '808 patent, since it requires only rearranging the limitations

involved and paraphrasing them.

14.   Claim 29 is rejected under the judicially created doctrine of obviousness-type double

patenting as being unpatentable over Claim 1 of U.S. Patent No. 6,281,808. Although the

conflicting claims are not identical, they are not patentably distinct from each other.

Claim 29 teaches a collision avoidance system for a first traffic signal having a current

light phase equal to one of the set consisting of at least red and green and a second traffic signal

having a current light phase equal to one of the set consisting of at least red and green,

comprising:

at least one violation image capturing device;

a plurality of showing at least one vehicle approaching the first traffic signal, the images

derived from an output of the violation image capturing device;

a processing unit responsive to the plurality of images and an indication of the current

first traffic signal light phase, for generating at least one violation prediction for the at least one

vehicle approaching the first traffic signal, the violation prediction indicating a likelihood that

the at least one vehicle approaching the first traffic signal will violate an upcoming red light

phase of the first traffic signal;

a collision avoidance unit responsive to the violation prediction, for asserting at least one

violation predicted signal; and

a traffic light controller for the second traffic signal for controlling the second traffic

signal responsive to the violation predicted signal in order to signal traffic approaching the

second traffic signal not to enter the intersection;

the processing unit further operative to, maintain a virtual violation line, derive a position

of the at least one vehicle from at least one of the plurality of images, compare the position of the

vehicle to the virtual violation line, and generate a confirmation signal indicative of a red light

violation in response to a determination that the at least one vehicle has crossed the virtual

violation line during the red light phase of the first traffic signal.

Claim 1 of the '808 patent teaches a collision avoidance system for a first traffic signal

having a current light phase equal to one of the set consisting of at least red and green and a

second traffic signal having a current light phase equal to one of the set consisting of at least red

and green, comprising:

at least one violation image capturing device;

a plurality of showing at least one vehicle approaching the first traffic signal, the images

derived from an output of the violation image capturing device;

a processing unit responsive to the plurality of images and an indication of the current

first traffic signal light phase, for generating at least one violation prediction for the at least one

vehicle approaching the first traffic signal, the violation prediction indicating a likelihood that

the at least one vehicle approaching the first traffic signal will violate an upcoming red light

phase of the first traffic signal;

a collision avoidance unit responsive to the violation prediction, for asserting at least one

violation predicted signal; and

a traffic light controller for the second traffic signal for controlling the second traffic

signal responsive to the violation predicted signal in order to signal traffic approaching the

second traffic signal not to enter the intersection;

the processing unit further operative to, maintain a virtual violation line, derive a position

of the at least one vehicle from at least one of the plurality of images, compare the position of the

vehicle to the virtual violation line, and generate a confirmation signal indicative of a red light

violation in response to a determination that the at least one vehicle has crossed the virtual

violation line during the red light phase of the first traffic signal, using somewhat different

language.

It would have been obvious to one of ordinary skill in the art to arrive at Claim 29 of the

application from the elements of claim 1 of the '808 patent and the description of the '808 patent,

since it requires only rearranging the limitations involved and paraphrasing them.

15.   Claims 30-43 are rejected under the judicially created doctrine of obviousness-type

double patenting as being unpatentable over Claims 2-12, 14, 15 and 17 of U.S. Patent No.

6,281,808. Although the conflicting claims are not identical, they are not patentably distinct

from each other.

Claims 30-43 depend on the independent claim 29 and then include various limitations in

the dependent claims. The independent claim 29 is taught by claim 1 of the '808 patent as

discussed in Paragraph 14 above. The limitations in claims 30-43 are same or paraphrased

variations of the limitations in claims 2-12, 14, 15 and 17 of the '808 patent. It would have been

obvious to one of ordinary skill in the art to arrive at Claims 30-43 of the application from the

elements of claims 2-12, 14, 15 and 17 of the '808 patent, since it requires only rearranging the

limitations involved and paraphrasing them.

16.   Claim 44 is rejected under the judicially created doctrine of obviousness-type double

patenting as being unpatentable over Claim 18 of U.S. Patent No. 6,281,808. Although the

conflicting claims are not identical, they are not patentably distinct from each other.

Claim 44 teaches a method of collision avoidance at an intersection for a first traffic

signal having a current light phase equal to one of the set consisting of at least red and green and

a second traffic signal having a current light phase equal to one of the set consisting of at least

red and green, comprising:

capturing a plurality of images showing at least one vehicle approaching the first traffic

signal, the images derived from an output of a violation image capturing device;

maintaining at least one virtual violation line at an intersection for the at least one vehicle

approaching the first traffic signal;

generating, responsive to the plurality of images and an indication of the current first

traffic signal light phase, at least one violation prediction for the at least one vehicle approaching

the first traffic signal, the violation prediction indicating a likelihood that the at least one vehicle

approaching the first traffic signal will violate an upcoming red light phase of the first traffic

signal;

asserting, responsive to the violation prediction, at least one violation predicted signal

coupled to the second traffic signal;

controlling, responsive to the violation predicted signal, the second traffic signal in order

to signal traffic approaching the second traffic signal not to enter the intersection;

generating from at least one of the plurality of images a location of the at least one

vehicle with respect to the virtual violation line;

comparing the location of the at least one vehicle to a position defined by the virtual

violation line; and

generating an output indicative of a red light violation of the first traffic signal in the

event the location of the vehicle is determined to be beyond the position of the virtual violation

line within the intersection during the red light phase of the first traffic signal.

Claim 18 of the '808 patent teaches a method of collision avoidance at an intersection for

a first traffic signal having a current light phase equal to one of the set consisting of at least red

and green and a second traffic signal having a current light phase equal to one of the set

consisting of at least red and green, comprising:

capturing a plurality of images showing at least one vehicle approaching the first traffic

signal, the images derived from an output of a violation image capturing device;

maintaining at least one virtual violation line at an intersection for the at least one vehicle

approaching the first traffic signal;

generating, responsive to the plurality of images and an indication of the current first

traffic signal light phase, at least one violation prediction for the at least one vehicle approaching

the first traffic signal, the violation prediction indicating a likelihood that the at least one vehicle

approaching the first traffic signal will violate an upcoming red light phase of the first traffic

signal;

asserting, responsive to the violation prediction, at least one violation predicted signal

coupled to the second traffic signal;

controlling, responsive to the violation predicted signal, the second traffic signal in order

to signal traffic approaching the second traffic signal not to enter the intersection;

generating from at least one of the plurality of images a location of the at least one

vehicle with respect to the virtual violation line;

comparing the location of the at least one vehicle to a position defined by the virtual

violation line; and

generating an output indicative of a red light violation of the first traffic signal in the

event the location of the vehicle is determined to be beyond the position of the virtual violation

line within the intersection during the red light phase of the first traffic signal, using somewhat

different language.

It would have been obvious to one of ordinary skill in the art to arrive at Claim 44 of the application from the elements of claim 18 of the '808 patent and the description of the '808 patent, since it requires only rearranging the limitations involved and paraphrasing them.

17.   Claims 45-54 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 19, 20 and 24-31 of U.S. Patent No. 6,281,808. Although the conflicting claims are not identical, they are not patentably distinct from each other.

Claims 45-54 depend on the independent claim 44 and then include various limitations in the dependent claims. The independent claim 44 is taught by claim 18 of the '808 patent as discussed in Paragraph 16 above. The limitations in claims 45-54 are same or paraphrased variations of the limitations in claims 19, 20 and 24-31 of the '808 patent. It would have been obvious to one of ordinary skill in the art to arrive at Claims 45-54 of the application from the elements of claims 19, 20 and 24-31 of the '808 patent, since it requires only rearranging the limitations involved and paraphrasing them.

18.   Claim 55 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claim 18 of U.S. Patent No. 6,281,808. Although the conflicting claims are not identical, they are not patentably distinct from each other.

Claim 55 teaches a method of avoiding collisions at an intersection, comprising:

receiving data defining a virtual violation line from a user, the virtual violation line corresponding to a location at the intersection;

storing a representation of the intersection and the virtual violation line;

capturing images of a vehicle approaching the traffic signal at the intersection;

analyzing the images to determine whether the vehicle is likely, during an upcoming red

light phase of the traffic signal, to cross the virtual violation line; and

upon determining that the vehicle is likely to cross the virtual violation line during the

upcoming red light phase of the traffic signal, generating a signal operative to control an

indicator to warn cross traffic approaching the intersection not to enter the intersection.

Claim 18 of the '808 patent teaches a method of avoiding collisions at an intersection,

comprising:

the virtual violation line corresponding to a location at the intersection;

storing a representation of the intersection and the virtual violation line;

capturing images of a vehicle approaching the traffic signal at the intersection;

analyzing the images to determine whether the vehicle is likely, during an upcoming red

light phase of the traffic signal, to cross the virtual violation line; and

upon determining that the vehicle is likely to cross the virtual violation line during the

upcoming red light phase of the traffic signal, generating a signal operative to control an

indicator to warn cross traffic approaching the intersection not to enter the intersection.

Claim 18 of the '808 patent does not teach receiving data defining a virtual violation line

from a user. '808 patent teaches receiving data defining a virtual violation line from a user (CL6,

L11-13). It would have been obvious to one of ordinary skill in the art to arrive at Claim 55 of

the application from the elements of claim 18 and the description of the '808 patent, since it

requires only rearranging the limitations involved and paraphrasing them and adding some

limitations taken from the description.

19.   Claims 57-66 are rejected under the judicially created doctrine of obviousness-type

double patenting as being unpatentable over Claims 19-28 of U.S. Patent No. 6,281,808.

Although the conflicting claims are not identical, they are not patentably distinct from each

other.

        Claim 57-66 depend on the independent claim 55 and then include various limitations in

the dependent claims. The independent claim 55 is taught by claim 18 and the descriptions of the

'808 patent as discussed in Paragraph 18 above. The limitations in claims 57-66 are same or

paraphrased variations of the limitations in claims 19-28 of the '808 patent. It would have been

obvious to one of ordinary skill in the art to arrive at Claims 57-66 of the application from the

elements of claims 19-28 of the '808 patent, since it requires only rearranging the limitations

involved and paraphrasing them.

20.   Claims 67-69 are rejected under the judicially created doctrine of obviousness-type

double patenting as being unpatentable over Claim 18 of U.S. Patent No. 6,281,808. Although

the conflicting claims are not identical, they are not patentably distinct from each other.

        Claim 67-69 depend on the independent claim 55 and then include various limitations in

the dependent claims. The independent claim 55 is taught by claim 18 and the descriptions of the

'808 patent as discussed in Paragraph 18 above. The limitations in claims 67-69 are taught at

CL5, L65 to CL6, L1 and Cl6, L14-15 of the '808 patent. It would have been obvious to one of

ordinary skill in the art to arrive at Claims 67-69 of the application from the elements of claim 55

and the descriptions of the '808 patent, since it requires only rearranging the limitations involved

and paraphrasing them and adding some limitations from the description.

21.   Claim 70 is rejected under the judicially created doctrine of obviousness-type double

patenting as being unpatentable over Claims 1, 14 and 2 of U.S. Patent No. 6,281,808. Although

the conflicting claims are not identical, they are not patentably distinct from each other.

Claim 70 teaches a system for avoiding collisions at an intersection, comprising:

a virtual violation line interface for receiving data defining a virtual violation line from a

user, the virtual violation line corresponding to a location at the intersection;

a storage device for storing a representation of the intersection and the virtual violation

line;

at least one camera for capturing images of a vehicle approaching the traffic signal at the

intersection; and

a processing unit operative: (1) to analyze the images to determine whether the vehicle is

likely, during an upcoming red light phase of the traffic signal, to cross the virtual violation line,

and (2) upon determining that the vehicle is likely to cross the virtual violation line during the

upcoming red light phase of the traffic signal, to generate a signal operative to control an

indicator to warm cross traffic approaching the intersection not to enter the intersection.

Claim 1 of the '808 patent teaches a system for avoiding collisions at an intersection;

the virtual violation line corresponding to a location at the intersection;

a processing unit operative: (1) to analyze the images to determine whether the vehicle is

likely, during an upcoming red light phase of the traffic signal, to cross the virtual violation line,

and (2) upon determining that the vehicle is likely to cross the virtual violation line during the

upcoming red light phase of the traffic signal, to generate a signal operative to control an

indicator to warm cross traffic approaching the intersection not to enter the intersection.

Claim 1 of the '808 patent does not teach a virtual violation line interface for receiving

data defining a virtual violation line from a user; a storage device for storing a representation of

the intersection and the virtual violation line; at least one camera for capturing images of a

vehicle approaching the traffic signal at the intersection. '808 patent teaches a virtual violation

line interface for receiving data defining a virtual violation line from a user (CL6, L11-13).

Claim 14 of the '808 patent teaches a storage device for storing a representation of the

intersection and the virtual violation line; Claim 2 of the '808 patent teaches at least one camera

for capturing at least one image of a vehicle approaching the traffic signal at the intersection. It

would have been obvious to one of ordinary skill in the art to arrive at Claim 70 of the

application from the elements of claim 1, 14 and 2 of the '808 patent and the description of the

'808 patent, since it requires only rearranging the limitations involved and paraphrasing them

and adding some limitations taken from the description.

22.   Claims 72-80 are rejected under the judicially created doctrine of obviousness-type

double patenting as being unpatentable over Claims 2, 3, 7-12, 15 of U.S. Patent No. 6,281,808.

Although the conflicting claims are not identical, they are not patentably distinct from each

other.

Claim 72-80 depend on the independent claim 70 and then include various limitations in

the dependent claims. The independent claim 70 is taught by claim 1 and the descriptions of the

'808 patent as discussed in Paragraph 21 above. The limitations in claims 72-80 are same or

paraphrased variations of the limitations in claims 2, 3, 7-12, 15 of the '808 patent. It would

have been obvious to one of ordinary skill in the art to arrive at Claims 72-80 of the application

from the elements of claims 2, 3, 7-12, 15 of the '808 patent, since it requires only rearranging

the limitations involved and paraphrasing them.

23.   Claims 81-84 are rejected under the judicially created doctrine of obviousness-type

double patenting as being unpatentable over Claim 1 of U.S. Patent No. 6,281,808. Although the

conflicting claims are not identical, they are not patentably distinct from each other.

Claim 81-84 depend on the independent claim 70 and then include various limitations in

the dependent claims. The independent claim 70 is taught by claim 1 and the descriptions of the

'808 patent as discussed in Paragraph 21 above. The limitation in claim 81 is taught at Fig. 5

and CL11, L45-46 and CL12, L39-40 of the '808 patent. The limitations in claims 82-84 are

taught at CL5, L65 to CL6, L1 and Cl6, L14-15 of the '808 patent. It would have been obvious

to one of ordinary skill in the art to arrive at Claims 81-84 of the application from the elements

of claim 70 and the descriptions of the '808 patent, since it requires only rearranging the

limitations involved and paraphrasing them and adding some limitations from the description.

Allowable Subject Matter

24.   Claims 4, 18, 56 and 71 are objected to as being dependent upon a rejected base claim,

but would be allowable if rewritten in independent form including all of the limitations of the

base claim and any intervening claims.

Conclusion

ACTION IS FINAL

25.   The terminal disclaimer filed on 4 November 2004 disclaiming the terminal portion of

any patent granted on this application which would extend beyond the expiration date of

6,281,808 is NOT accepted. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

26.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Dr. Kandasamy Thangavelu whose telephone number is

571-272-3717. The examiner can normally be reached on Monday through Friday from

8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kevin Teska, can be reached on 571-272-3716. The fax phone number for

the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is 703-305-

9600.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

K. Thangavelu
Art Unit 2123
January 23, 2005

KEVIN J. TESKA
SUPERVISORY
PATENT EXAMINER